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The HALF Imperative: Foundation for Improving the Health of the Force

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14. ABSTRACT

A smaller active duty force and an increased operational tempo (OPTEMPO) have made the Reserve Components (RC) essential elements in the accomplishment of the mission of the U.S. Army. One critical factor in meeting mission is maintaining the optimal health of each soldier. Baseline health data about the RC is currently not being collected, even though increasing numbers of reserve soldiers are being activated. The ?Annual Health Certification and Survey? (AHCS) is being developed as a way to meet the RCs? statutory requirement for annual certification of health while at the same time generating and tracking baseline data on each reservist in a longitudinal health file, the Health Assessment Longitudinal File (HALF). This article discusses AHCS/HALF, which will greatly enhance the Army?s ability to accurately certify the health status of the RC and track health in relation to training, mission activities, and deployment.

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ABSTRACT

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The “Annual Health Certification and Survey” (AHCS) is being developed as a way to meet the RCs’ statutory requirement for annual certification of health while at the same time generating and tracking baseline data on each reservist in a longitudinal health file, the Health Assessment Longitudinal File (HALF).

This article discusses AHCS/HALF, which will greatly enhance the Army’s ability to accurately certify the health status of the RC and track health in relation to training, mission activities, and deployment.

The health status of troops is a critical component to the strength, readiness, and effectiveness of the military's ability to mobilize.[1] Future decisions regarding force health protection and deployment policies will be based on analyzing available scientific data on health and the environment. Thus, accurate documentation of health status is important prior to, during, and following deployment. However, the current method of collecting baseline data - during preparations for deployment - has proven to be highly ineffective and exceptionally expensive.

Past deployments triggered many unanswered questions regarding the relationship of the deployment environment to health problems and left many unresolved health issues (e.g., Gulf War Syndrome). Ten years after the Gulf War, the Committee on Strategies to Protect the Health of Deployed U.S. Forces concluded that progress has been unacceptable in implementing plans designed to protect the health of deployed U.S. Forces.[2] Their recommendations include maintaining health status for both active-duty and reserve service on an annual basis.

In 1998, when Chief of Staff of the Army General Dennis A. Reimer reconfigured the force to place a greater share of operational requirements on the two Reserve Components (RCs), Army Reserve and Army National Guard, the RCs became essential elements in accomplishing the Army mission. Unfortunately, the medical readiness of the RCs is not currently known, even

though RC members are being activated in increasing numbers to serve in settings where the environmental impact on health may be significant.

Because of the importance of baseline health, an initiative has begun to systematically acquire health status information from reservists. This initiative is known as The Annual Health Certification and Survey/Health Assessment Longitudinal File (AHCS/HALF).

Increased Operational Tempo (OPTEMPO)

The need for combat-ready troops has been reinforced by the current war on terrorism and the focus on homeland defense. Even before the terrorist events on September 11, 2001, troops were being deployed in unprecedented numbers into non-combat environments for peacekeeping, humanitarian assistance, nation-building, or training.

The Army has established a goal to have visible combat presence anywhere in the world within 96 hours, a division on the ground in 120 hours and five divisions in theater in 30 days, based largely on a rapidly deployable active component.[3] However, the events of late 2001 and early 2002 accelerated even this aggressive goal, with some reserve units being mobilized and deployed within days. This degree of operational readiness depends on high levels of health. That means the Army must have reliable documentation of the health status of its reserve troops at all times. Since the future active army is likely to remain small, an increased emphasis is being placed on the medical readiness of the RCs.

Two major themes evolved from past deployments. The first is that medical readiness can be a showstopper when activating the RCs. For example, the Desert Shield/Storm experience demonstrated that large numbers of RC soldiers had health issues that affected their readiness and restricted their ability to be deployed.[4] This resulted in delays in deployment processing while medical or dental conditions were identified and corrected, or while replacement personnel were located.

The second theme is that health concerns surface after troops return home, and baseline data are needed to measure health changes. Unresolved health matters have a direct, adverse impact morale and retention.

Reliance on the RCs

The RCs not only add strength in numbers to existing Active Component (AC) structure, but also contribute unique units and certain capabilities not found in the AC. The Selected Reserve elements of the RC comprise 54 percent of the Army force and include essential combat, combat support, and combat service support assets. To illustrate, the RCs provide 82 percent of public affairs assets, 97 percent of civil affairs capabilities, 85 percent of all medical brigades, 81 percent of psychological operations units, 70 percent of engineering battalions, and 66 percent of all military police.[5] Thus, the RCs are very important to the total force.

Tracking the health of the RCs and establishing baselines pose a particular challenge in that these soldiers are in a military status for only 36 days a year. During the remainder of the year, they are civilians responsible for

maintaining their own health without access to care in the institutional Military Health System (MHS).

Environmental Impact on Health

Health-related problems can be caused by exposure to environmental contaminants. According to the Department of Health and Human Services report *Healthy People 2010*, individual behavior and environmental factors are responsible for 70 percent of premature deaths in the United States.[6] However, without baseline data, it is frequently impossible to document the role played by either one in health issues.

As troops deploy, threats will be posed to health by environmental hazards, making it is especially important for the military to be able to quantify exposures reliably and to identify individuals who might be susceptible. Past deployments have resulted in concerns over environmental exposures. Numerous instances have been identified in which soldiers were subjected to environmental or health risks which had detrimental effects on well-being. Even ten years after Operation Desert Shield/Storm, uncertainty still exists regarding health risks, potential exposures, and adverse outcomes in the 697,000 troops who were deployed.[7] Nearly 270,000 of these were RC members.[8] Since the establishment of the Gulf War Illness Registry, jointly operated by DoD and the Department of Veterans Affairs (VA), over 60,000 individuals have registered for evaluation, making it evident that the final toll of a conflict on an individual's health is not known until well after the deployment ends.[7]

Two major limitations in clinical and epidemiological studies regarding health and the environment have been identified: a lack of baseline data and a lack of detailed exposure data. Without baseline data, evaluating whether health problems were caused or possibly exacerbated by the wartime experience is difficult.[9] Predeployment health status data and longitudinal health tracking information would have been invaluable in assessing the causes of chronic, unexplained symptoms in Gulf War veterans.[10]

Baseline Health Status

In 1998, Force Health Protection (FHP) became the Army's conceptual framework to optimize health readiness and to protect service members from health and environmental hazards.[11] Medical surveillance is a critical component of this comprehensive management strategy. In military settings, medical surveillance is essential to determine the medical readiness of the force, to identify potential health risks during training and operational missions, and to establish health promotion programs to maintain the health of the troops. Collection of baseline health status information forms the cornerstone of medical surveillance and is required prior to, during, and following deployment. Prior to deployment, baseline health information not only defines medical readiness, but is also necessary for developing health promotion programs to assist in maintaining healthy, fit, and operationally effective forces. With this information, individuals can be identified who would benefit from health promotion programs, such as smoking cessation or alcohol use education.

Moreover, the RC is an older force than the AC. Over 25 percent of the RC is over age 40 versus 7 percent of the AC.[12] This fact raises many new concerns not previously addressed. Epidemiological studies of collected longitudinal health data can help identify the impact of age on both readiness and precursors for chronic disease. They can also help determine if there are preventable risks with specific military duties, occupational exposures, deployment, or a combination of these factors. As more and more women are mobilized, gender-specific health problems (i.e. reproductive health) will need to be addressed to protect the health and well-being of service women.

A longitudinal health file will be especially valuable during and after deployment because it will reflect pre-deployment health. By comparing historical health data with post-deployment data, changes in health status can be more accurately attributed to either past history or the deployment, and appropriate interventions can be initiated. In addition, documentation of changes in health occurring during deployment can ensure the availability of accurate surveillance data for future use. Acquiring this information allows the use of epidemiological research to determine whether deployment-related exposures are associated with post-deployment health outcomes. Integrating and analyzing data on health status becomes critical for longitudinal research on the impact of deployment. Overall, the collection of longitudinal health information is necessary to validate medical readiness and crucial in facilitating research that addresses many unanswered health questions.

Current Tracking Mechanisms: Information Systems Review

Goals for improving health preparedness have included enhancing DoD's collection of health and exposure data, along with improving linkages among health information systems.[13] DoD has launched several medical and health surveillance initiatives in the last several years. When exploring what has been established to generate data on the health status of the military population, the most significant problem is that data collection has been inconsistent and incomplete. Additionally, a lack of tools to determine baseline health status has been identified as one of the obstacles to optimizing efficiency within the Military Health System (MHS).[14] Health surveillance of the RCs in particular is a serious challenge. Beginning steps have fallen short of what is actually needed to document baseline health of the RCs.

Several discrete initiatives have begun that can help address these shortfalls. The Recruit Assessment Program (RAP), the Medical Force Protection System (MEDPROS), and the Defense Medical Surveillance System (DMSS) each provide a piece of a potential comprehensive solution. When linked to existing tools and ongoing studies, these can become building blocks in an effective baseline and population health program. The missing link is an effective and continuous data acquisition mechanism.

Recruit Assessment Program

The RAP is a DoD pilot program currently being tested to collect comprehensive baseline health data on all new recruits, including Reserve and National Guard soldiers. Information on demographic, medical, psychosocial,

occupational, and health risk factors is collected via a scannable paper questionnaire. If implemented across the Services, DoD will have access to comprehensive baseline health status data for the first time.[15] With 250,000 individuals entering the military each year, this program will lay the groundwork for an enormous longitudinal database which can be linked with other DoD, VA, and Department of Health and Human Services (DHHS) systems. This would create a strong foundation, but there is no mechanism to add to this information as the soldier continues in his or her career. Unless follow-up and linkages are established, the data will not provide the necessary information needed for assessing the overall health of the force over time.

Medical Force Protection System

The MEDPROS is a module of the Army's Medical Operational Data System (MODS).[16] It was created in 1998 to track the Anthrax Vaccine Immunization Program (AVIP). MEDPROS has since grown into an operational system for tracking all DoD-mandated Individual Medical Readiness (IMR) requirements. These include all 102 CDC-recognized immunizations, HIV status, DNA specimen collection, dental readiness, date of last physical and physical classification, and other health status indicators. The MEDPROS provides the capability to view a unit's or individual's medical readiness on these items and to identify shortfalls in readiness status. For the first time, commanders can view their units' readiness on the items that are tracked. MEDPROS does not, however, collect information on baseline health status.

Defense Medical Surveillance System

In March 1997, the Assistant Secretary of Defense for Health Affairs (ASD-HA) directed that the Army establish and operate the Defense Medical Surveillance System (DMSS). The DMSS is the corporate executive information system for medical surveillance, developed and operated for all four services by the Army Surveillance Activity (AMSA). The DMSS is a continuously growing relational database, which includes data on all active duty personnel in any Service (Army, Navy, Air Force, and Marine Corps) since 1990. It defines medical surveillance as "the routine and systematic collection, analysis, interpretation, and reporting of population-based data for the purposes of detecting, characterizing, and countering threats to the health, fitness, and well being of populations".[17]

The DMSS receives and integrates standardized data related to medical events from multiple Service and DoD sources worldwide. Information includes personal characteristics (e.g., rank, military occupation, demographic factors), medical surveillance (e.g., hospitalizations, outpatient visits, reportable diseases, HIV results, health risk appraisals, immunizations, deaths), and military experiences (e.g., deployments, assignments). Real-time access is provided to authorized users worldwide (through the Internet) to the Defense Medical Epidemiology Database (DMED) contained within DMSS. Four main sources of data are available through DMED: population data, in-patient data, ambulatory data and reportable event data.

The DMSS became available for storage of data from the pre-deployment (DD Forms 2795) and post-deployment (DD 2796) survey forms in FY00. Yet, out of the 15,000 Army personnel processed through the medical stations for Operation Noble Eagle and Operation Enduring Freedom, only 1,633 Pre-Deployment Health Assessments (DD Form 2795) were received by AMSA.[18] Not only are they not being completed but those that are completed are being administered under compromising circumstances so that the quality of the information has been questioned. Anecdotal accounts report that soldiers eager to serve fail to report conditions they feel may interfere with their deployment. While seemingly insignificant at the time, these conditions may have an impact on the individual's health during or after the deployment. In either event, the absence of an accurate baseline diminishes the validity of subsequent evaluations. Thus, it has been recommended that these pre-deployment assessments be discontinued. [19]

Annual Health Certification and Survey/Health Assessment Longitudinal File

There exists a pressing need to capture, in an automated format, information about the health status of RC soldiers, both as an older cohort and as an integral part of the Total Force. The Army Reserve has developed a tool that can meet this essential need for the Army and could be expanded to include all the services' Reserve Components. The "Annual Health Certification and Survey" (AHCS) meets the RCs' statutory requirement (10 USC 10206) for annual certification of health while at the same time generating a longitudinal record, the

Health Assessment Longitudinal File (HALF), on each reservist. The HALF database will be integrated with existing systems to provide a longitudinal record that would be used by both DoD and VA to track health trends.

The AHCS contains validated questions from several other widely-used surveys to facilitate the comparison of data across populations. The AHCS questionnaire consists of 11 core questions plus gender specific questions (2 male, 4 female) that will be given every year. There are also five different supplementary modules designed to track additional wellness indicators -- social issues, diet and physical activity, tobacco and alcohol use, stress, and occupational health. A different module is to be used in conjunction with the core questions each year on a rotating basis.

AHCS will be fielded online through Hooah4Health (H4H) (www.hooah4health.com), the Army's interactive health promotion web site. A paper copy (mark-sense document) will be available for those without Internet access. In order to maximize confidentiality the individual will provide very minimal identifying information on the AHCS, with the majority of demographic data being drawn from the Total Army Personnel Data Base (TAPDB) via the MEDPROS. Secure data storage will be provide by DMSS.

After completing the survey, soldiers will receive immediate feedback delineating overall health status and providing referrals to Hooah4Health modules. A green, amber, or red indicator system will be used to assist unit commanders in tracking individual medical readiness (IMR). When unhealthy behaviors or risk factors are identified, imbedded links to Hooah4Health provide

health promotion and risk reduction information. Soldiers identified as having medical problems will be provided feedback and a referral to an appropriate medical person. Commanders will be advised of the individual's red-amber-green status via MEDPROS. This notification validates completion of the statutory annual health certification requirement. A red-amber-green status report, keyed to question numbers, will be available to healthcare providers with role-based access privileges via MEDPROS. (See table 1 for immediate and future benefits)

An increasing number of RC members are receiving medical and dental readiness services via the partnership among the Army, the VA and the Division of Federal Occupational Health (FOH) of the DHHS, known as the Federal Strategic Health Alliance (FEDS_HEAL). The integration of AHCS information with this system fosters a seamless longitudinal record from recruitment to death.

Conclusion

Establishing a long-term health surveillance data collection system has important scientific value. It allows for identifying, assessing and mitigating potential adverse impacts on health. In addition, it addresses regulatory requirements, especially the need to conduct population-based epidemiological studies that can compare pre- versus post-deployment health status and support actions to develop health promotion and disease prevention programs.[13] These data also support a broader population health application consistent with the government's *Healthy People 2010* initiative and with the Public Health Data Standards Consortium (PHDSC), a coalition of organizations committed to the collaboration of local, state, federal and private sector agencies and

organizations for the promotion of data standards for public health and health services.[20]

The HALF database will allow for randomized sampling to test hypotheses relevant to environmental exposure and health issues. Currently health is a missing element in environmental polices.[21] Therefore, this information on baseline health will be useful for formulation of health and environmental policies. Most importantly, the policies that evolve from the application of this information will serve as both a force multiplier, allowing a smaller military to successfully defend the nation, and as a force protector, keeping the men and women who serve in uniform healthier throughout their careers and well into their status as veterans. This is a moral obligation owed to them.[13]

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The views expressed in this article are those of the author and do not necessarily reflect the official policy or position of the Army, Department of Defense, or the U.S. Government.

Immediate Benefits	Future Benefits
• Single, recurring instrument with continuous data acquisition. • Continuity across systems (DoD-VA). • Immediate online feedback to soldiers • Health promotion/prevention focus • Annual health certificate • Color indicators to Healthcare Providers • Identification of soldiers with unhealthy behavior • Referrals to specific information within H4H modules • Enhanced pre-mobilization assessment capabilities	• Elimination of duplicate tools • Population-Based Health Management Tool • Integration with RAP and VA • Trends of health indicators in both older and younger cohorts • Database available for investigators to test emerging hypotheses • Collaboration with civilian databases

Table 1. Identification of immediate and future benefits of AHSC/HALF.

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